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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,623	10/23/2003	Melvin K. Carter	60937-0202	5933
9629	7590	08/17/2006	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			VINH, LAN	
			ART UNIT	PAPER NUMBER
			1765	

DATE MAILED: 08/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/690,623		CARTER ET AL.	
	Examiner		Art Unit	
	Lan Vinh		1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-16 is/are allowed.
- 6) ☐ Claim(s) 1-8 and 10-12 is/are rejected.
- 7) ☒ Claim(s) 9 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Prosecution on the merits of this application is reopened on claims 1-8, 10-12 considered unpatentable for the reasons indicated below:

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,12 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Rege Thesauro et al (US 2003/0181142 A1)

De Rege discloses a method of CMP a substrate surface comprising: providing a substrate comprising a noble metal, providing a polishing system that includes a polishing pad and a liquid carrier, abrasive and a sulfonic acid compound, the polishing liquid comprises one polishing additives and contacting the substrate with the system (see abstract and claim 1). Paragraph 0032 indicates that the substrate comprising a noble metal can be a semiconductor material or a memory device material, as required in claim 1. Paragraph 0019 and claim 5 indicate the possibilities for the sulfonic acid compound. There are 31 specifically named sulfonic acid compound and at least 2 of these, 3-amino-4-hydroxylbenzenesulfonic acid and 2-formylbenzenesulfonic acid, would meet the limitation of part B of claim 1. Specifically, both these compounds are organosulfonic acid oxidizer having one ring structure comprising carbon (the benzene

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ring), a sulfonate moiety substituted onto a carbon atom in the ring structure (the sulfonic acid group at position 1 on the benzene ring), and a polar moiety substituted on the ring on a meta position from the sulfonate moiety (the amino group is polar and is in the ortho position 2 on the ring). The claimed sulfonate moiety clearly encompasses the "sulfonic acid groups of the reference in view of applicants paragraph 0018 which says that "sulfonic acid moiety" and "sulfonate moiety" are used interchangeably herein. Furthermore, in solution, the sulfonic acid of the reference would be in both forms in equilibrium. Step D of moving the pad against the substrate with the polishing composition therebetween would be inherent in the reference step of contacting the substrate with the polishing system since using moving a polishing pad against the substrate without the liquid carrier and the sulfonic acid between the pad and the substrate would render the carrier/sulfonic acid useless in the method. It is recognized that the two sulfonic acid compound noted above are only 2 out of list of about 31 specifically named possibilities noted by the reference. However, given the list of possible sulfonic compounds in paragraph 0019 and claim 5 of 142, it is clear that 142 considers the listed sulfonic acid to be functionally equivalent relative for the polishing method. Thus, even though 142 does not specifically disclose an example that uses one of these two sulfonic acids in the polishing method, one skilled in the art at the time the invention was made would have found it obvious to use either one of these sulfonic acids in the polishing system because they are functionally equivalent to the others that are suggested and exemplified. It is noted here that while 142 does not

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disclose many other polishing additives, the main focus of the reference relative to the additives.

3. Claims 2-8, 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Rege Thesauro et al (US 2003/0181142 A1) in view of Antonell et al (US 6,899,596)

De Rege Thesauro fail to disclose that the sulfonic acid /organosulfonic acid has an electrochemical oxidation potential greater than 0.7V

Antonell, in a CMP method, discloses that benzene having a dipole moment of less than 1.4 (col 5, lines 11-15)

One skilled in the art at the time the invention was made would have found it obvious to modify De Rege by using a sulfonic acid has an electrochemical oxidation potential greater than 0.7V in view of Antonell teaching because Antonell discloses that benzene is a material having dipole moment of less than 1.4 or it may be non-polar (col 5, lines 11-14)

Regarding claims 4, 7, De Rege discloses using abrasive (see abstract)

Regarding claims 6, 8, De Re discloses using 0.01 to 5 wt % of sulfonic acid (col 3, paragraph 0024), 0.5-10 wt% of abrasive (col 2, paragraph 0014)

The limitations of claims 3, 5, 11 have been discussed above

Allowable Subject Matter

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4. Claims 9, 13 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 14-16 allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claims 14-16, the cited prior art of record fails to disclose or suggest a method of cleaning a substrate surface comprising a step of providing a fluid cleaning composition comprising an organosulfonic acid oxidizer, said organosulfonic acid oxidizer having a ring structure comprising carbon, a sulfonate moiety substituted onto a carbon atom in the ring structure, and a polar moiety substituted onto the ring on an ortho position or a meta position from the sulfonate moiety, in combination with the rest of the limitations of claims 14-16

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lan Vinh whose telephone number is 571 272 1471.

The examiner can normally be reached on M-F 8:30-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571 272 1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LV

August 15 , 2006